# 2010-2011
# Wisconsin Aquatic Invasive Species Progress Report

*Prevent...*
*Contain...*
*Control...*


Sea Grant
University of Wisconsin

WISCONSIN DEPT. OF NATURAL RESOURCES

UW Extension
Cooperative Extension

## *By the numbers…*

***for up-to-date information visit: http://dnr.wi.gov/lakes/invasives***

# Our Waters

**Our Waters**

- 67% of our lakes with public access are free of Eurasian water-milfoil and zebra mussels.
- Just 2.5% of lakes predicted to be suitable for zebra mussels are currently infested.
- 136 inland waters have zebra mussels.
- 584 waters statewide have Eurasian water-milfoil and only 135 of these waters are in the northern region.

# Our Partners

**Our Partners**

- 85, 490 watercraft inspected (July 2010-June 2011), mostly through the Clean Boats, Clean Waters network.
- 85% of watercraft inspections were on waters that contained invasive species.
- 11 water guard conservation wardens creating an enforcement presence at boat landings in 2011.
- 47 counties actively partnering with the state to prevent and control the spread of aquatic invasive species.
- 92% of boaters aware of invasive species law, and 90% had no aquatic plants present on their boats or trailers.

# Our Investment

**Our Investments**

- $ $3.6 million in aquatic invasive species control grants awarded to local communities for aquatic invasive species prevention and control in FY2011.
- $ $17 million in grants awarded to local communities since 2003 for aquatic invasive species prevention and control.
- $ $229,000 awarded for aquatic invasive species research grants in FY2011.
- $ $837,000 awarded through Great Lakes Restoration Initiative Funding for implementation of Wisconsin's Comprehensive Management Plan for Aquatic Invasive Species.
- $ $498,000 awarded for Wisconsin Partnerships for Aquatic Invasive Species Prevention grant through the Great Lakes Restoration Initiative Funding.

# Our Goals

***Our Goals***

- Prevent aquatic invasive species from reaching Wisconsin
- Contain the spread of invasive species already present within the state
- Control damage caused by those that become established

**Greetings from the Aquatic Invasive Species Partnership,**

Aquatic invasive species threaten Wisconsin's lakes, rivers and wetlands. They disrupt the natural balance of species in our waters and can take the fun out of boating, fishing, and swimming. Getting out on the water is an integral part of Wisconsin life and lakes are the economic engines of many rural counties and urban waterfronts. I am proud to report on the hard work of many committed volunteers and partners. Wisconsin has made significant progress in its efforts against unwanted invaders during 2010-2011.

Our plan for protecting the waters of Wisconsin is straightforward, and is implemented in a variety of ways by volunteers and staff in communities across the state.

In the following pages, you will read about the state's efforts to control aquatic invasive species (AIS) along with a few highlights over the past year. To get the most up-to-date information about Wisconsin's efforts to control aquatic invasive species, please visit our webpage at www.dnr.wi.gov/invasives.

***Prevent* AIS from reaching Wisconsin**
When I travel around the state and listen to our partners I am constantly impressed with the passion and commitment they show in sharing the prevention message. Clean Boats, Clean Waters inspectors spend countless hours at boat launches conducting watercraft inspections. Local AIS partners post AIS boat landing signs reminding boaters of required AIS prevention steps. County and regional AIS coordinators hold monitoring and watercraft inspection trainings all in an effort to educate and encourage active participation in the fight against AIS. I feel energized by our partners and know together we are making a difference and slowing the spread of AIS.

***Contain* the spread of invasive species already present within the state**
We owe it to ourselves, our state and our next generation to stop the expansion of AIS. We need to draw a line in the sand that says "no more"! We need to impress upon those that enjoy our waters that by following those four simple preventative steps we CAN prevent the expansion of AIS, whether it's plants, mussels, or fish. Inspect, Remove, Drain and Never Move Live Fish are known to be effective actions at stopping the spread of AIS. The Citizen Lake Monitoring Network and Project Riverine Early Detection (RED) are early detection monitoring programs key in the containment of AIS. By detecting AIS early we stand a better chance to eradicate or manage the population to minimize the chance for it to spread to other waterways or other parts of a lake or river corridor.

***Control* damage caused by those that become established**
Sustaining control pressure on Eurasian water-milfoil (EWM) or curly-leaf pondweed with little hope of eradication may seem insurmountable. The cost and adverse impacts to native species and recreation should reinforce the importance of prevention and containment. However, we are gaining new insights into AIS control and I believe existing research will provide cause for optimism. Two areas gaining momentum are; early season Eurasian-water milfoil control and zebra/quagga mussel control. Our partnership with the US Army Corps of Engineers has provided Wisconsin with information on controlling EWM that was unheard of 10 years ago. New research being conducted at the US Geological Survey in LaCrosse on a common bacteria indicates that under the right laboratory conditions it will produce a by-product that will control zebra and quagga mussels without harming other organisms. It's hard to be patient when I hear about things like this, but the immense progress we have seen in control technology in just the past five years shows the importance of good science, especially when working with our natural resources.

**Making a difference:**
People make the difference! Whether I'm riding with our Water Guards as they head out to the landings to talk to boaters or am listening to citizens at the Northwest Wisconsin Lakes Conference in Minong and the Wisconsin Lakes Convention in Green Bay, I'm constantly reminded of the dedication of our partners to protect our waters from AIS. The phenomenal success of this year's 4th of July "Landing Blitz" tells me that people feel so strongly about this subject that they are willing to volunteer their time to stand at a local boat launch and talk to boaters on a holiday weekend. There are many examples of people making the difference in this Partnership and I wish I could meet them all and say thank you! This is truly a Partnership for success.

I hope the following pages give you a picture of this Partnership's accomplishments. Yes, there is more to do, but we are all up to the challenge.

Thanks for your support!

Sincerely,

*Bob Wakeman*
Statewide Coordinator
Aquatic Invasive Species
Wisconsin Department of Natural Resources

# Our Waters

We have stepped up our early detection efforts in Wisconsin. Early detection of invasive species is crucial as control and containment costs of problematic invaders increase rapidly once the species becomes established. Efforts by citizen volunteers, Wisconsin Department of Natural Resources (WDNR) staff and county and non-profit partners were all increased in 2011 due in large part to a Great Lakes Restoration Initiative grant to increase efforts in the Great Lakes basin.

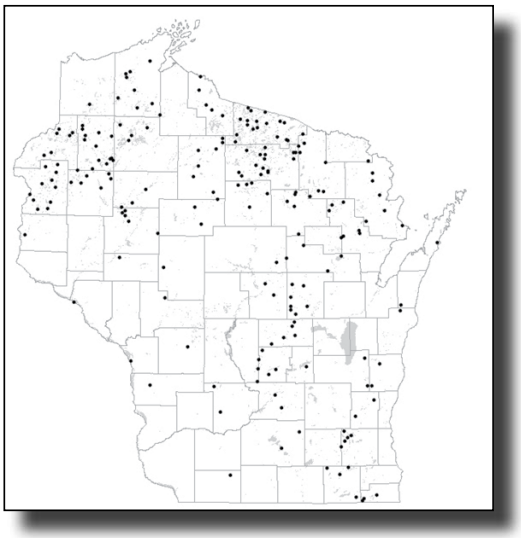


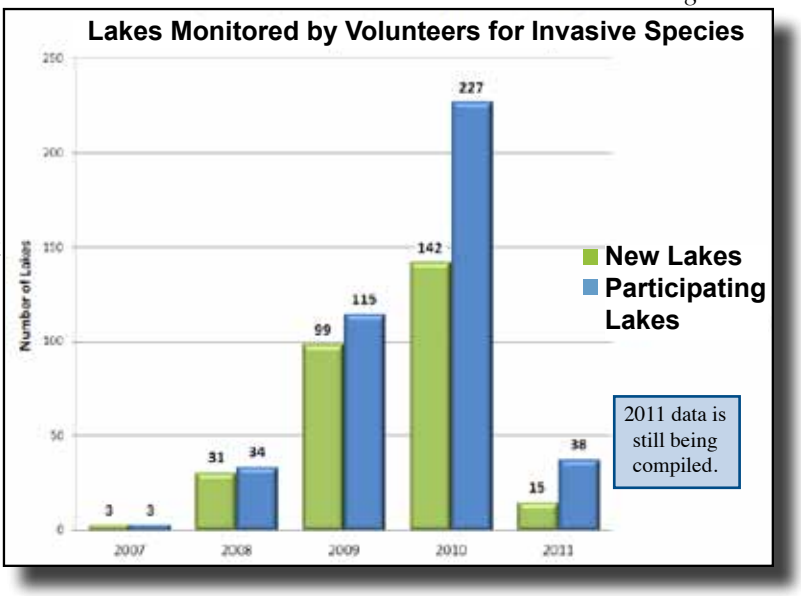
*Figure 1: WDNR has monitored 200 lakes statewide to track the spread of AIS in Wisconsin.*

We have relied heavily upon a strong network of citizen volunteers to monitor lakes and streams for new aquatic invasive species (AIS). The volunteers have been exceptional in the work they do, but the lakes selected by volunteers do not enable a statewide assessment of AIS. A statewide estimation of AIS presence and rate of spread are needed to measure the effectiveness of the State's AIS message which is aimed at stopping the spread of AIS by targeting transient boaters.

In 2011, we began a multi-year statewide AIS baseline monitoring effort of lakes that have boat landings. WDNR staff and county partners searched approximately 200 lakes for aquatic invasive species and will monitor a new set of lakes for at least the next four years. See Figure 1 for a distribution of AIS baseline monitoring efforts. This monitoring effort will allow a statistically sound evaluation of all of the lakes in Wisconsin and enable us to:

- Establish baseline data on statewide AIS distribution.
- Track the rate of AIS spread among Wisconsin lakes.
- Evaluate the effectiveness of outreach and education efforts aimed at stopping the spread of AIS.

*Figure 2*




We continue to engage citizen volunteers to watch for AIS in their lakes and on their shores. Citizens are the people that live on the water and are very often the first to notice an invasive species. To this end we partner with the University of Wisconsin – Extension Lakes program to train citizen volunteers to identify and report new sightings of AIS. Vigilant and aware volunteer monitors have been collecting data that is entered into our statewide database and alerts WDNR managers to the arrival of new invasive species. These trained citizen volunteers have looked for thirteen problematic invasive species for many years, and now their data is being captured in our WDNR database. Citizens now tell us where they have searched and whether or not they have seen AIS. The number of lakes monitored for AIS by citizens continued to increase in 2010. Lakes monitored during the 2011 season have not yet been reported, though we expect the upward trend to continue.

To find maps and information about the distribution of aquatic invasive species in Wisconsin, visit: http://www.dnr.wi.gov/lakes/invasives/

# Our Partners

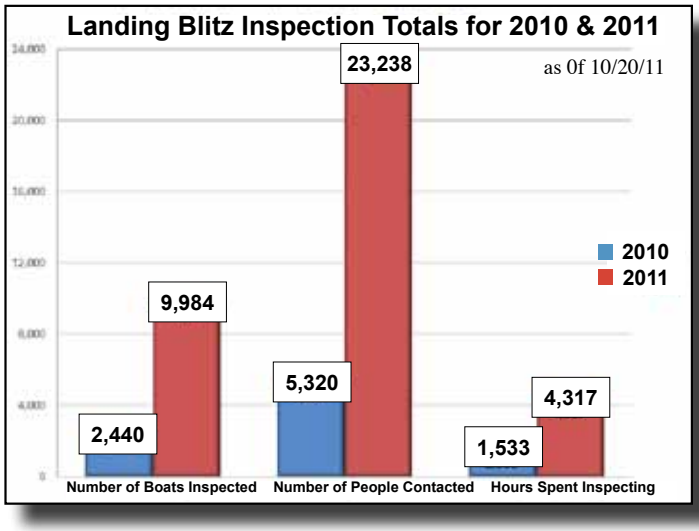
Figure 3


Winning the fight against aquatic invasive species is a statewide effort in Wisconsin. Our AIS partnership is comprised of local volunteers, county-based staff and representatives from state-wide agencies and organizations such as the Wisconsin Department of Natural Resources, University of Wisconsin Sea Grant, University of Wisconsin Extension, Great Lakes Indians Fish and Wildlife Commission, River Alliance of Wisconsin and the Wisconsin Association of Lakes (Figure 3). This team approach provides Wisconsin a mechanism to take statewide initiatives, such as the 2011 Landing Blitz, and implement them at the local level.

The 2011 Landing Blitz took place over the Fourth of July holiday weekend, from June 30 to July 4. This year's event was a true team effort featuring: Clean Boats, Clean Waters volunteers, WDNR staff and wardens, WI Sea Grant interns, and UW Oshkosh interns all conducting boat inspections and sharing AIS prevention information at over 90 high traffic water bodies across Wisconsin (Figure 4). Inspectors did a great job of demonstrating the required steps for boaters, providing "Stop Aquatic Hitchhikers!" stickers for boaters to place on their trailers, handing out towels that reinforce the prevention steps, and educating others on the importance of AIS prevention. Over the course of the weekend, 9,984 boats were inspected, a 16% increase compared with 2010. The Blitz also received a great deal of news coverage, which helped spread the AIS message to the general public and boaters who were not inspected over the course of the weekend. Over forty news agencies and nine different TV news networks featured the Landing Blitz as a part of their content across the state.

*Watercraft inspection is a key component of the AIS partnership boaters.*

Figure 4




*For up-to-date totals visit: http://dnr.wi.gov/lakes/invasives/CleanBoatsProjectOutcome.aspx?project=48059135*

In addition to participating in statewide efforts, local/county partners are working hard on aquatic invasive species projects.

## ***Featured Local Projects***

### *Vilas County*

The Vilas County-wide AIS Partnership has been busy again this year. Sixteen heavily trafficked lakes were treated with herbicides to control established populations of two invasive plant species. WDNR cost sharing through the AIS Control Grants program made these treatments possible. While eradication remains elusive, herbicide control is minimizing damage to the infected lakes and the potential for outward spread to other lakes.

Lake monitoring efforts unfortunately detected previously unknown invasive plant populations in two additional county waterbodies this summer. Plans for initiating control programs are being developed for spring implementation.

Boater education and watercraft inspections as prescribed by the Clean Boats, Clean Waters program remain priority activities. Six paid student interns will have logged over 2,600 hours at 15 area boat landings by the end of August. Lake organizations contracted with UW Oshkosh to sponsor the student services at a total cost of over $30,000. Participating sponsors are using either local dollars to pay for the services or WDNR cost share grants. Coordination of the program, including training, scheduling and oversight of the students, is provided by Vilas County's Invasive Species Coordinator. This program coupled with county-wide volunteers and local WDNR staff will likely have achieved well over 4,000 hours of CBCW efforts in Vilas County by the end of the 2011 boating season.

Combined efforts of the Lac du Flambeau Town Lakes Committee and the North Lakeland Discovery Center resulted in approximately ¼ million *Galerucella* beetles being raised and released this summer to control purple loosestrife in priority riparian and wetland areas in western Vilas County. Additionally, a mapping effort was undertaken this year to assess the extent of purple loosestrife along the 70 miles of shoreline on the lower Eagle River chain of lakes in the southeastern corner of the county. Riparian property owners on whose lands the plant is found will be contacted during the coming fall and winter and encouraged to participate in a control program to be launched during the spring of 2012.

Galerucella *beetles are raised as a biological control for Purple Loosestrife.*

## *Door County*

Door County continues to provide education, prevention, and control planning for AIS throughout the Door Peninsula. The Door County Soil & Water Conservation Department (SWCD) has been fortunate to receive funding assistance through the Wisconsin Department of Natural Resources AIS grant program to help sustain and foster these efforts.

WDNR's AIS grant funding has allowed SWCD to hire a contractor to coordinate AIS educational activities in Door County. The coordinator works closely with the Door County Invasive Species Team (DCIST). DCIST is a group of natural resource professionals and interested resource professionals that are concerned with preserving Door County's native environment. Monthly DCIST public meetings are held in the county at various locations featuring presentations by resource professionals and/or citizens regarding aquatic invasive species topics and issues.

Currently, the species of focus on the peninsula has been *Phragmites australis*. DCIST has been recruiting and training many volunteers to inventory this widespread invasive specie with the aide of GPS units. To date, approximately 100 acres of Phragmites populations have been inventoried and mapped on the County's GIS system. This number is expected to continue to increase. These inventories are being used to help prioritize project areas, as well as assist the WDNR with its Great Lakes Restoration Initiative (GLRI) project. The goal is to expand this mapping effort to other invasive species. Volunteers have been enthused to use GPS units and to walk the peninsula. Furthermore, DCIST has found great success with one-on-one site visits with landowners as a way to educate. Visiting with individual landowners is a way to tailor educational outreach regarding natural history, ecological processes, and the threat of exotic species establishment. DCIST is aimed to educate individuals about the natural world that exits in "their own backyard." It is this connection with landowners that has resulted in over 7,500 volunteer hours and over $14,900 in cash donations submitted to the Door County Invasive Species team to assist their continued efforts in invasive species education, prevention, and control in Door County, Wisconsin.

Phragmites *is an invasive wetland plant that can take over an entire shoreline.*

## *Walworth County*

The Walworth County Aquatic Invasive Species Control and Prevention Program is designed to provide AIS prevention education throughout Walworth County and the SE Fox River Basin, which includes most of Waukesha, Racine and Kenosha Counties. The Walworth County Aquatic Invasive Species Control and Prevention Program is partially funded with a Wisconsin Department of Natural Resources Aquatic Invasive Species Prevention grant.

Boating and angling, while not the only mode of AIS introduction and spread, is a major vector. The Walworth County Aquatic Invasive Species Control and Prevention Program, via Wisconsin's Clean Boats, Clean Waters (CBCW) watercraft inspection program, has provided education to 2,307 boaters at 16 Walworth County launches on 12 lakes. The Walworth County Lake Specialist also conducted 12 CBCW training workshops to instruct 67 individuals (24 teams) on CBCW watercraft inspection methods. These teams have worked to educate an additional 19,767 boaters in Walworth County and throughout the Southeast Fox River Basin. As part of the program, the Lake Specialist has worked with lake residents to sample ten County lakes for the presence or absence of zebra mussels and spiny waterflea. The County has also been surveyed for purple loosestrife populations. A map showing the location of all populations was created and forwarded to the Wisconsin Purple Loosestrife Control Coordinator. The Lake Specialist has assisted the Department with rapid response planning, implementation and follow-up monitoring for three sites contaminated with aquatic species listed as prohibited by Chapter NR 40.

Since its inception, the Walworth County Aquatic Invasive Species Control and Prevention Program has made it possible to educate thousands of southeast Wisconsin residents and visitors. In addition to the CBCW watercraft inspection initiative, 67 presentations have been provided to lake associations and districts, boater safety classes, scouting groups, master gardeners, landscapers and municipal governments. One on one contacts have also been made to area bait dealers, plant nurseries and pet stores in order to educate proprietors and provide educational materials for their clients. Additional work products include a boat accessible carwash location map for Walworth County, aquatic plant management plans for two underserved County lakes, and an AIS prevention-friendly boat launch modification checklist.

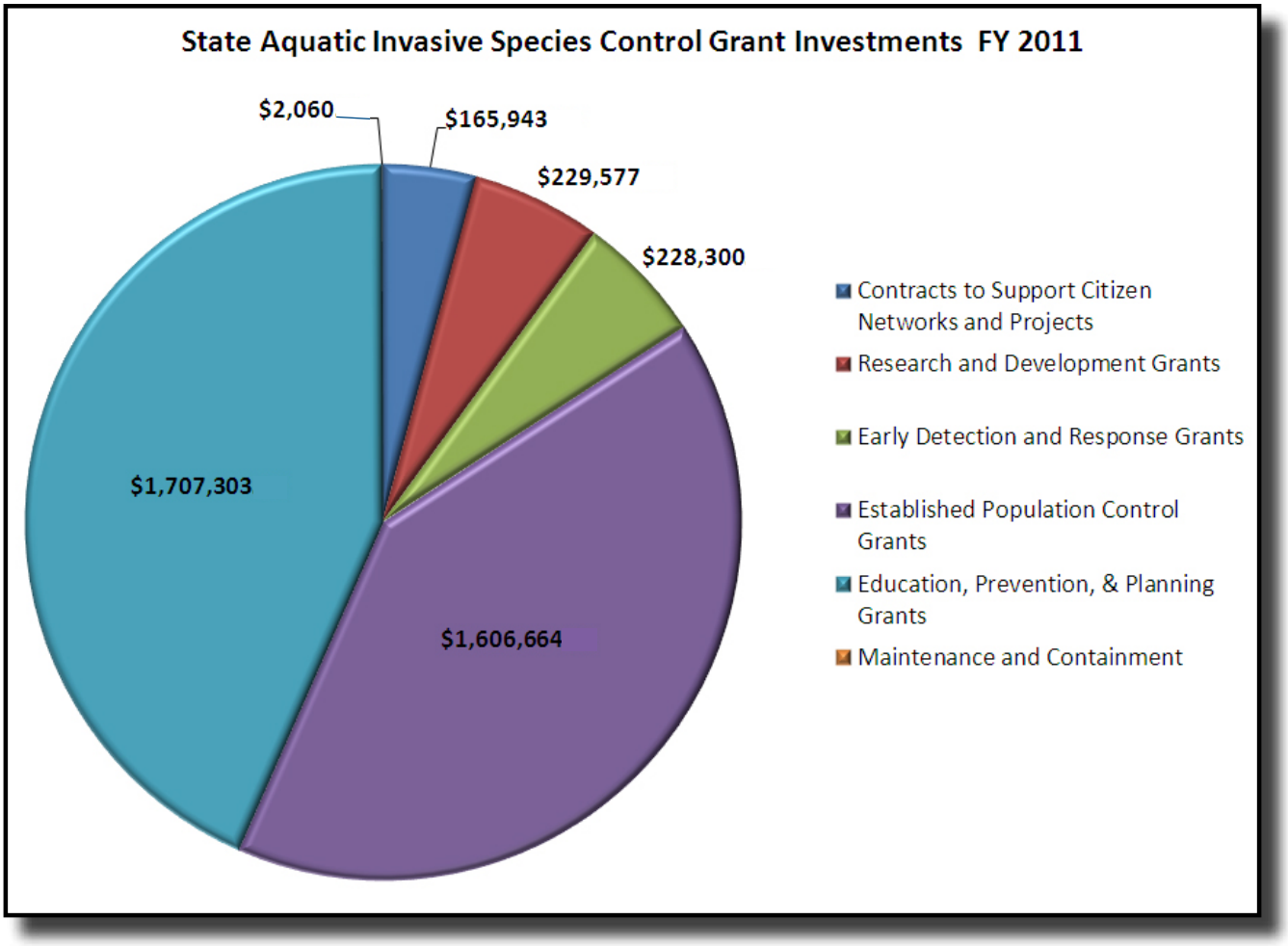
# Our Investment

## *State Funding*

Supporting local efforts to prevent, contain and control aquatic invasive species is a cornerstone of the Department's aquatic invasive species philosophy. This is accomplished through our Aquatic Invasive Species Control Grant program which enables recipients to more than double their local investments. The Department sets grant criteria that support statewide AIS priorities and works with grant recipients to ensure dollars are being invested strategically. These dollars are highly sought after and accomplish much more than the Department or local partners could do on their own. The grants are awarded in five categories: Education, Prevention and Planning, Early Detection and Response, Controlling Established Infestations, Research and Demonstration, and Maintenance and Containment. In addition, WDNR invests $665,943 ($165,943 from AIS grants program) to support citizen networks and entities that receive grants mainly through contracts with UW-Extension and UW-Madison. These networks conduct purple loosestrife biocontrol, watercraft inspections, monitoring, and other community-based aquatic invasive species projects. Figure 5 below summarizes the AIS Control Grant dollars distributed during FY 2011.

For more information on AIS Control Grants, visit:
http://dnr.wi.gov/org/caer/cfa/Grants/Lakes/invasivespecies.html

*Figure 5*



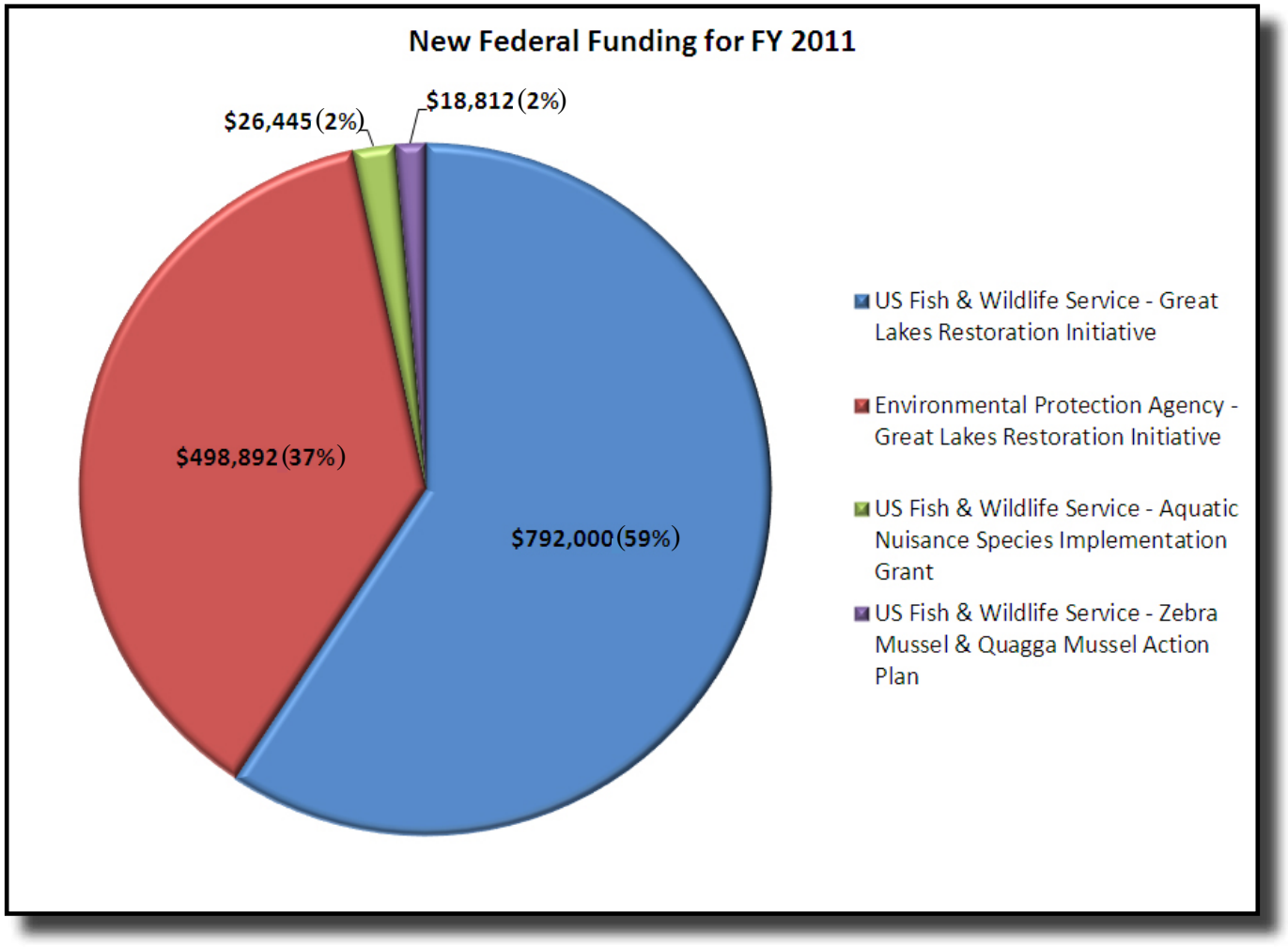
## *Federal Funding*

Wisconsin received over $1.3 million dollars from federal agencies for FY2011 (Figure 6). With President Obama's recognition of the importance of the Great Lakes, the federal government created the Great Lake Restoration Initiative (GLRI). This Initiative provided grant dollars to Great Lake states through US Fish and Wildlife Service (USFWS) and the Environmental Protection Agency (EPA) for a few critical areas; aquatic invasive species prevention, containment and control was one of those areas. Wisconsin invested USFWS funds to increase capacity at the local level by hiring several Aquatic Invasive Species County Coordinators along the Great Lakes. These funds were also used to increase the state's monitoring effort, conduct social marketing research to ensure effective messaging and fund an effective media campaign.

EPA funds were used to hire WDNR Monitoring Specialists aimed at increasing AIS monitoring and watercraft inspection efforts within the basin. These funds were also used in-part to hire a Great Lakes Outreach Coordinator to build AIS programs and partnerships along the Great Lakes and work with local communities to engage them in activities that would help to create a barrier against AIS expansion.

Wisconsin will continue to apply for these federal dollars and push them into critical elements of the partnership to maximize our ability to prevent, contain and control AIS.

*Figure 6*



# Our Goals

We will continue to strengthen our network of partners, including local units of government, university researchers and citizen volunteers, to accomplish our aquatic invasive species goals - **prevent** aquatic invasive species from reaching Wisconsin, **contain** the spread of invasive species already present within the state and **control** damage caused by those that become established. In the next year we will:

***Respond to emerging threats –*** A number of developments including the advancement of Asian carp toward Lake Michigan bring increasing attention to invasive species in the Great Lakes. Wisconsin is at the table for these Great Lakes conversations and has successfully competed and received federal funding (Great Lakes Restoration Initiative) to increase efforts in the Great Lakes basin. During the next year we will continue to invest significant time and energy on protecting the Great Lakes and the Mississippi River, ensuring that these heavily-used waters do not spread new species to inland Wisconsin waters. We will also expand our efforts to reduce the amount of invasive species that are spread via retail sales through a study of aquatic plant vendors, biological field surveys of waterbodies in high risk areas, and targeted education and outreach efforts.

***Sharpen our lookout –*** Early detection often means the difference between eradication and ongoing maintenance to reduce the damage aquatic invasive species cause once they are established. Being able to quickly determine that a species has shown up in a new area can also help focus containment efforts and reduce the risk to nearby waters. We rely heavily on our citizen volunteers to collect data and will continue to work to support their efforts and increase volunteer participation in AIS monitoring of lakes and rivers and purple loosestrife, especially in the Great Lakes basins. While we are proud of our citizen initiatives, we also recognize the need for a statistically sound monitoring scheme that will allow us to draw confident conclusions about trends in spread over time. This multi-year statewide baseline monitoring effort was successfully started in 2011 and will continue over at least the next three years.


***Enhance our capabilities to respond quickly –*** DNR has responded rapidly and successfully to new invasive species introductions in the past several years, but this action often comes at the expense of already planned work. We plan to hire an Early Detection and Rapid Response coordinator to develop a model statewide response plan and coordinate early detection response actions. In addition, we have received federal funding to take aggressive action to eradicate a new and prohibited invasive species, the Red Swamp Crayfish, in two sites in southeast Wisconsin. The populations have been controlled and contained for the past two years and this funding will allow plans for complete eradication to move forward.

***Step up enforcement –*** We have worked for many years to create the regulatory framework that now exists to prevent the introduction and spread of aquatic invaders. With a strong set of laws and rules, and polling data showing high levels of awareness and compliance among boaters, we now have the task of ensuring that these laws are supported by comprehensive enforcement. Department of Natural Resources conservation wardens will continue efforts to move from education to enforcement. They will partner with county and local law enforcement officials and work with volunteers at the boat landings to ensure water users across the state are receiving consistent messages.

***Add tools to our toolbox –*** We will continue to use research to optimize our AIS prevention, containment and control strategies. Our research partners provide us with information to improve effectiveness and delivery of our AIS prevention messages, prioritize species that will be most problematic and waterbodies that are most at risk, and enhance the effectiveness of our chemical and biological control methods for aquatic invasive plants. Progress in the use of weevils to treat Eurasian water-milfoil populations and improved 2,4 D treatments may provide us with the necessary tools to better control AIS. In addition, social science research is helping us target and engage key audiences, such as bait dealers, with our outreach efforts over the next year. As we learn more we will continue to share new knowledge and resources with our large network of partners from neighboring states to local communities.

***Nurture partnerships –*** We are extremely proud of the dynamic and dedicated partnership of citizens and staff who tirelessly give their energy and time to protect Wisconsin's lakes, rivers and wetlands. Over the next year, we will continue to strengthen and sustain this network by providing partners tools to work efficiently, developing tactics to prevent volunteer burnout, and recruiting new partners on source waters such as the Mississippi River and the Great Lakes basins, where our aquatic invasive species network has historically been less than complete.